



# Michigan Department of Agriculture & Rural Development

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## Pesticide & Plant Pest Management Division Annual Report 2011

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*Introduction by Gina Alessandri, Director, Pesticide & Plant Pest Management Division*

Welcome to the Pesticide and Plant Pest Management (PPPM) Division! We're responsible for enforcing laws and implementing a diverse range of programs relating to the regulation of pesticide sales and use; the manufacture and distribution of agricultural products; sales, storage, and distribution of agricultural commodities; invasive species detection and response; and plant pest certification.

Our staff work closely with consumer and commodity groups, industry, and state and federal partners to ensure pesticide products are safely stored, appropriately used, and adequately available. PPPM staff provides critical grading services for Michigan's fruits and vegetables; and assures strict consumer and producer protection standards are met for agricultural products such as feed, seed, fertilizer, and stored grain to support the department focus on food safety and economic development. Additionally, this division facilitates domestic and international trade by ensuring nursery stock and other agricultural commodities meet rigorous phytosanitary standards.



We began the 2011 year saying good-bye to 12 division colleagues who opted to take the state's early retirement option. Despite this significant loss of experience, expertise, and staff resource, the division through innovation, collaboration, and hard work provided quality service and assistance to our many customers and to the residents of the state. This annual report reflects that hard work, and I am proud to share it with you.

In addition to providing quality customer service through our inspection, certification, sampling, and investigation work described in this report, the division focused on internal operations this year, making adjustments to regional boundaries and supervision, shifting program oversight, collaborating with our established call center and licensing units, and reviewing and assessing our team culture and the important values of Leadership, Excellence, and Teamwork.

Collaboration with industry, state, and federal partners was also a priority for the PPPM division; and will remain a priority. Several division staff routinely participated in meetings, provided consultation, and served on committees to facilitate discussion and accomplishment of common goals.

Looking forward to 2012, the PPPM division will continue to focus its resources on the division's mission critical activities and the priorities of the department. This includes ensuring food safety, protecting plant and animal health, sustaining environmental stewardship, providing consumer protection, and enabling rural development. We look forward to serving our constituents and the residents of Michigan.

**The mission of the Pesticide and Plant Pest Management Division is to:**  
*Protect human health and the environment, while fostering  
a diverse, viable Michigan agriculture.*

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## Section 1 – Exotic & Invasive Species Pest Management



### Emerald Ash Borer

Emerald ash borer (EAB) was first identified in 2002 in six Michigan counties and has since spread to 75 counties, including seven in the Upper Peninsula (U.P.) (Eight counties in the U.P. are quarantined). New county infestations identified in 2011: Keweenaw in January, Wexford in March, and Lake in April. The quarantine was last revised on February 8, 2011.

Approximately 50 million of Michigan's 700 million ash trees have been killed due to EAB. In addition, EAB infestations have been found in Canada, Illinois, Indiana, Iowa, Kentucky, Maryland, Minnesota, Missouri, New York, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin. These infestations are attributed to artificial movement, specifically the movement of nursery stock, firewood, and other ash material including logs.

During the past nine years, the Michigan Department of Agriculture & Rural Development (MDARD), along with its partners, the Michigan Department of Natural Resources (DNR), United States Department of Agriculture – Animal and Plant Health Inspection Service (USDA-APHIS), the USDA - Forest Service (USDA-FS), Michigan State University (MSU), and Michigan Technological University (MTU) have learned a great deal about this pest's lifecycle, its flight patterns, its reproductive habits, and how it spreads. They have focused on utilizing new methods to identify the leading edge of infestations to further suppress the spread of EAB into new areas.

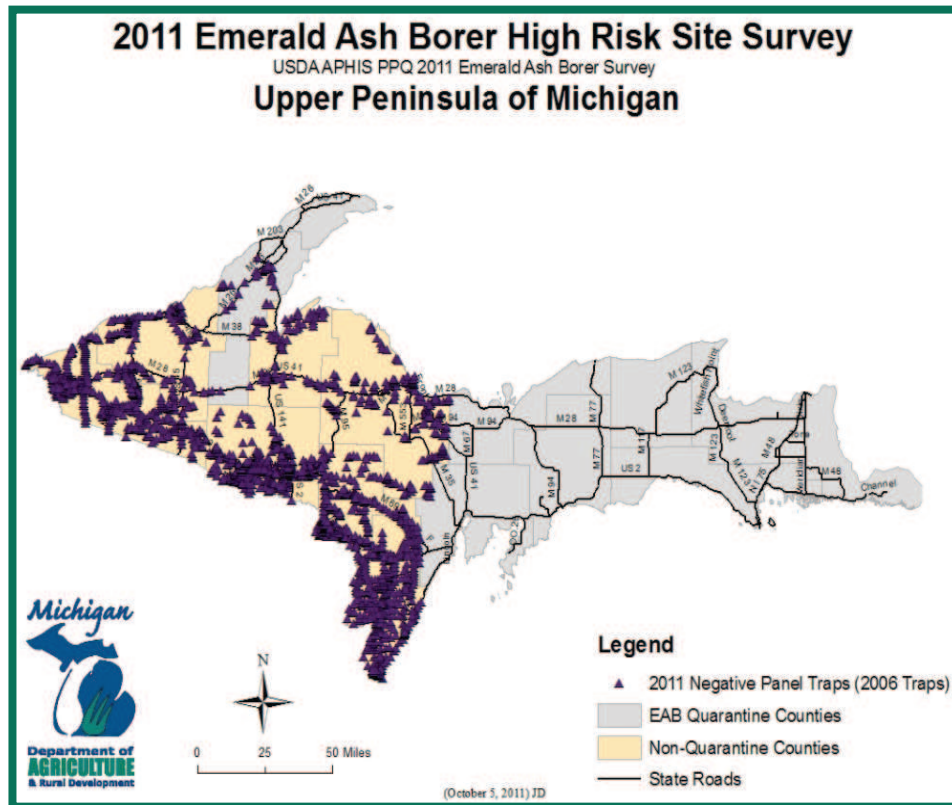
Continued survey of the non-quarantined counties in Michigan continues to be a critical activity. Knowing where EAB exists in the U.P. will allow for regulation of areas once they are found to be infested. Continued survey within the quarantined counties of the U.P. allows for the ongoing adjustment of Quarantine Level boundaries and subsequently a change in how those areas are regulated.

### National Emerald Ash Borer Survey

The focus of the MDARD's portion of the USDA-APHIS National EAB Survey was to utilize baited panel traps designed to detect EAB. The information MDARD collected was combined with information from other participating states to map the location of the beetle. In June 2011, more than 2,000 traps were hung in ash trees throughout the seven non-quarantined counties in the U.P. (Baraga, Dickinson, Gogebic, Iron, Marquette, Menominee, and Ontonagon) and in the southern portion of the quarantined county of Houghton. Whenever possible, traps were hung at high risk sites such as campgrounds, firewood dealers, sawmills, recreational lakes, etc. The highest density trapping occurred in the four counties in the western U.P. bordering Wisconsin and seven townships in the southern most portion of Ontonagon County. Inspections of the panel traps were conducted in late August and early September 2011. Staff from the Houghton/Keweenaw, Dickinson, and Marquette conservation districts accomplished the activities in all eight counties. Trapping activities were conducted with MDARD oversight and technical support. There were no EAB detected during the 2011 National EAB Survey.



**Panel Trap Installation**



### SLow Ash Mortality (SLAM)



Since 2008, the EAB infestation sites in Mackinac County have been used, and continue to be used, for a pilot mitigation project as part of an integrated multi-year; multi-agency strategy entitled SLow A.sh M.ortality (SLAM) which is cooperatively conducted by MDARD, USDA-APHIS, USDA-FS, DNR, MSU, and MTU. Beginning in 2011, infestation sites in the Garden Corners area of Delta/Schoolcraft counties; and in the Calumet/Laurium area in Houghton County were also used as pilot mitigation project sites. The SLAM effort is designed to suppress EAB population growth and delay the onset and progression of widespread ash mortality. The project employs and measures the impact of multiple strategies to slow the rate at which EAB disperses and impacts ash trees. The primary facets of the project include: EAB density and distribution survey, communication and outreach, regulatory compliance, biological control, host reduction, insecticide treated trees, 'sinks', forest health survey, ash abundance and distribution survey, data collection and management, and an evaluation of overall project results. These pilot projects will provide a model for future outlier sites in Michigan and around the United States.

In 2011, PPPM staff was highly involved in performing quality control/quality assurance work at the Mackinac County SLAM site as well as assisting with baited panel trap and detection tree inspections there. Also, PPPM Pesticide Inspector Field Staff monitored the insecticide applications as they were performed by contractors at the Mackinac and Houghton SLAM sites to ensure compliance with state pesticide regulations.



***2011 Chippewa/East Mackinaw Conservation***



***Girdled Detection Tree Establishment***

### **Additional Survey Activities**

A delimiting survey was conducted at one outlier location in the U.P. (Munising/Alger County). PPPM field inspectors conducted the field activities at this site. In June, 100 baited panel traps were installed. Inspections later in the summer ended with EAB being detected on seven of those traps. This is the first time EAB has been detected at that site since the original detection there in the latter part of 2009.



***Girdled Detection Tree Inspection Training***



***Panel Trap Inspection***

Panel traps were also installed on Beaver Island by PPPM staff. The 15 traps installed were all negative for EAB when checked later in the summer.

PPPM staff provided technical assistance to the Alger Conservation District and to Pictured Rocks National Lakeshore for additional panel trap survey activities that they conducted in Alger County. In late summer, when traps were being inspected, no EAB were detected on any of the traps they had established.

### **Regulatory Activities**

Preventing the artificial spread of EAB continues to be a priority for the state. In 2011, MDARD continued its focus on enforcing the EAB quarantine and increasing compliance. Regulatory activities included monitoring the movement of ash products, conducting regular inspections, investigating quarantine violations, and issuing compliance agreements to firms that process, or have the potential to process ash wood products.



PPPM EAB program staff, in conjunction with MDARD's Animal Industry Division, maintained the MDARD Inspection Station at the Michigan Department of Transportation's St. Ignace Welcome Center just north of the Mackinac Bridge until early September. In early September, the Inspection Station was closed due to budget reductions. Inspection Station staff monitored the movement of hardwood firewood and ash wood products leaving Michigan's Lower Peninsula. Staff inspected private and commercial vehicles entering the U.P. and either seized all wood in violation or ordered the load in violation to return to its place of origin. Travelers and commercial firms found to be moving regulated ash were issued a "Report of Violation" on site, after which the facts of the case were reviewed for prosecution, civil penalties, or warning letters.

**Bridge Inspections 1/1/11 to 9/9/11:**

Commercial Trucks.....	6,103
Pulpwood (Cords).....	69,557
Chips & Sawdust (Tons).....	29,025
Sawn Lumber (Board Feet).....	18,790,879
Firewood Inspected (Pieces) (St. Ignace).....	410
Firewood Inspected (Pieces) (Mackinaw City).....	7,189
Firewood Contacts.....	1,210
Reports of Violation.....	22

PPPM staff also continues to identify firms and persons that may artificially spread EAB such as nurseries, landscapers, firewood dealers, logging and milling companies, utility companies, tree removal and trimming firms, excavation and land clearing firms, municipalities and/or other government agencies, composting yards, and ash disposal facilities.

MDARD and USDA-APHIS continued to issue compliance agreements to firms allowing the movement of regulated products from quarantined areas. On a regular basis, PPPM staff inspects firms or persons with compliance agreements to verify appropriate treatment and disposal methods are met, shipments have the appropriate certification, and records are accurate. Should any portion of the compliance agreement not be met, the compliance agreement may be revoked, and firms and/or persons may be subject to regulatory action, including prosecution.

In 2011, PPPMD maintained an average of approximately 120 compliance agreements with receivers, brokers, and shippers.

**Biological Control**

In 2011, USDA scientists continued to evaluate parasitic wasps as biological control agents against EAB. MDARD approved the general release of these organisms in 2007 after a national review and comment period conducted by USDA-APHIS and a finding of no significant environmental impact. The results will be studied to decide whether the wasps can become established in Michigan and provide effective control against EAB. By the end of October 2011, the rearing facility established in Brighton by USDA-APHIS produced 26,276 *Oobius agrili* females, 140,591 *Tetrastichus planipennisi* females and 87,757 *Spathius agrili* females. Releases of these parasitic wasps have occurred in multiple counties in Michigan's Lower Peninsula (L.P.) and at two sites in the U.P. A parasitic wasp native to Michigan in the genus *Atanycolus* is also being evaluated as a possible biological control agent against EAB. USDA researchers are continuing in their efforts to identify other possible biological control agents. In addition, USDA continues to explore both the biology of EAB and its host material (ash) to develop a more effective and efficient lure and trap.



*Atanycolus cappaerti*



*Atanycolus cappaerti* cocoon



## **Outreach Activities**

Outreach and education efforts are essential in every aspect of the EAB program. Public awareness and understanding enhances compliance with the quarantine and supports the state's overall efforts to prevent the artificial spread of EAB.

PPPM produced and distributed numerous pieces of educational materials to stakeholders as well as the general public. Additionally, staff hosted public meetings and several informational booths, educational seminars, workshops, and group discussions at both the state and national level.

PPPM continued to maintain the EAB Hotline. The top four areas of inquiry/concern were:

1. Clarification on firewood movement.
2. Inquiries about funding assistance for tree removal.
3. Inquiries from individuals who believe they have EAB and who are looking for guidance on what to do.
4. Requests for compliance assistance.

Highway signs remained positioned at key locations as northbound travelers approached the Mackinac Bridge informing them not to bring firewood into the U.P.

In November, during firearm deer hunting season, a regulatory "blitz" was conducted at the Mackinac Bridge. During the blitz, 131 travelers were contacted and no firewood was found moving in violation of the quarantine. In addition, 36 commercial wood hauler contacts were made. No regulated ash wood was found moving in violation of the quarantine. The general knowledge of the quarantine restrictions on moving regulated materials was rated as "high."

There were several news releases in 2011 including one on February 14th announcing the EAB Quarantine revision which added language to protect Great Lakes islands. There was one on May 25th that reminded travelers it is illegal to move firewood out of the L.P. and one on November 3rd announcing the 2011 baited panel trap survey results and reminding hunters of the restrictions on moving firewood.

## **Exotic Pest Detection**

PPPM is responsible for the detection, regulation, and when applicable, control or eradication of exotic insects, plant pathogens, and noxious weeds. These exotic pests can significantly impact agricultural production, ecological sustainability, and human health.

Exotic pests gain entry into new areas as contaminants in agricultural and related commodities, as hitchhikers in cargo and baggage, or through natural spread of established populations. PPPM utilizes a variety of trapping, sampling, and inspection techniques in an effort to locate these pests while there is still time to implement successful mitigation strategies.

Michigan is home to eight significant ports-of-entry, including the busiest commercial border crossing in the world. Its agricultural, horticultural, and industrial sectors receive plants and plant products from around the globe. And with more than 200 commodities, Michigan has the nation's second-most diverse agricultural economy. Taken together, these factors place Michigan at exceptional risk for the introduction and impact of exotic pests.

Surveys for exotic insects, plant pathogens, and noxious weeds are facilitated through PPPM's participation in the Cooperative Agricultural Pest Survey (CAPS) and Farm Bill Section 10201 pest detection programs. Administered by USDA-APHIS-PPQ, these programs provide federal funding to conduct surveys for early detection of exotic plant pests, to facilitate export of U.S.-grown commodities, and to support regulatory and management initiatives.

## **Warehouse Survey**

Solid-wood packing materials like crates and pallets are the most significant means by which exotic woodboring insects like emerald ash borer gain entry into the U.S. PPPM continues to conduct a trapping, inspection, and outreach program at high-risk warehouses and industrial facilities statewide. In 2011, and continuing into early 2012, 60 sites are being monitored on a monthly basis. This is the third year PPPM has conducted this Farm Bill-funded project with nearly 200 firms surveyed to date.

### Potato Cyst Nematodes

Two exotic species of potato cyst nematodes – pale cyst nematode and golden nematode – are known to occur in the U.S. and Canada. To ensure foreign markets remain open to Michigan-grown potatoes, PPPM participates in a national program designed to detect populations of the nematodes or demonstrate their absence in seed potato fields statewide. In 2011, PPPM completed the fourth consecutive year of sampling with 1,030 acres surveyed in the Upper Peninsula and northern Lower Peninsula. To date, no potato cyst nematodes have been detected in Michigan, but full results from 2011 will not be available until early 2012.

### Plum Pox Virus

Plum pox virus (PPV), an extremely serious exotic disease affecting peaches, plums, apricots, and nectarines, was detected in a single tree in the southwestern Lower Peninsula during a routine survey in 2006. All potentially infected trees were removed and a quarantine was placed around the impacted area. A six-year survey to intensively sample this area, and the majority of stone fruit orchards in the largest producing regions of the state, began in 2007 and continued in 2011. Over 200,000 samples have been collected and processed with no additional PPV-infected trees found. A final year of intensive survey is planned for 2012. This remains one of the best examples of the importance of early detection in the response to exotic plant pests.



### Honey Bee Pests

Honey bees across the nation are under enormous stress from a host of known and unknown pests and other agents. In 2011, PPPM participated for the second year in a Farm Bill-funded national honeybee survey with the goals of establishing baseline pest information, detecting previously unknown exotic pests, and demonstrating pest freedom for federal regulatory purposes. This work is important to protect the state's honey production and pollination industries and the fruit and vegetable industries that depend on them. Twenty-five apiaries statewide were inspected and samples forwarded to USDA for analysis. Results of these analyses are pending.



### Hemlock Woolly Adelgid

Aggressive measures continue to be taken to eradicate hemlock woolly adelgid (HWA) from three Michigan counties since its first discovery in Harbor Springs in 2006. Hemlock is an ecological keystone species, making this pest among the most significant threats to the health of Michigan's northern forest ecosystems. Tree removals, pesticide treatments, and large-scale survey efforts continued in 2011 in Emmet, Macomb, and Ottawa counties and will continue in 2012 using funds acquired through a U.S. Forest Service competitive grant. Sustained diligence will be necessary to ensure Michigan remains free of this extremely destructive insect.



### Giant Hogweed

Giant hogweed is an invasive and potentially dangerous exotic weed that crowds out native vegetation and produces severe blistering when its sap contacts human skin. PPPM continues to respond to public reports of new infestations and provides property owners options for control. Additionally, PPPM also conducts treatments of infestations that would otherwise go uncontrolled. Hogweed is currently known from 62 sites in Michigan. Because of control efforts by homeowners, PPPM, and USDA, nearly all of these infestations are in decline. However, federal funding for this project has been eliminated for 2012, putting continued giant hogweed management efforts in jeopardy.

### High-Risk Nursery Survey

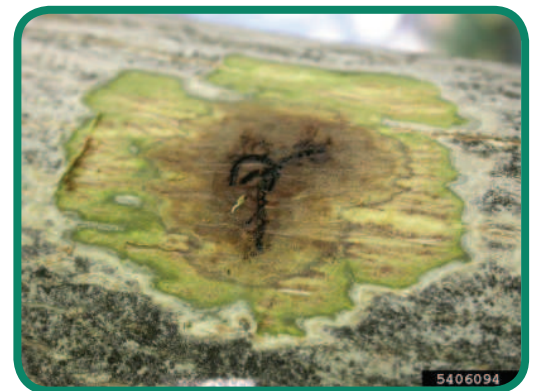
In 2010, PPPM utilized federal CAPS (Cooperative Agriculture Pest Survey) funding to conduct a survey for more than 33 priority exotic pests at 30 high-risk nurseries throughout the state. The survey utilized a variety of methods, including traps, sampling, and visual inspections targeting exotic woodboring and bark beetles, forest defoliators, fruit and vegetable pests, noxious weeds, snails, and nematodes. Sample identification will be complete in early 2012.

### Viruses on Imported Perennials

In response to growing concern over virus-infected herbaceous perennial imports, between 2006 and 2009, PPPM conducted surveys to systematically document the prevalence of viruses in perennial plants imported under USDA-APHIS preclearance programs. Since the plants sampled were not propagated at the facilities from which they were collected, it was evident that bare root plants and bulbs arriving from The Netherlands were already infected with viruses. To determine if actions have been taken to reduce these unacceptably high infections rates (which stood at approximately 25 percent in 2009), a large-scale imported plant sampling program began in late 2010 and will conclude in early 2011. This survey will utilize several high-tech methods, including Enzyme-Linked Immunosorbent Assay (ELISA), Polymerase Chain Reaction (PCR), and electron microscopy to document the prevalence of viruses in these plants.

### Thousand Cankers Disease

Thousand Cankers Disease (TCD) is an emerging pathogen that attacks several species of *Juglans*, including the high-value black walnut native to the eastern U.S. This disease and the bark beetle associated with it have been documented over the past five years to cause extensive losses to black walnut planted for landscaping in the western U.S. In 2010 and 2011, the disease was found in three eastern states. In 2011, PPPM conducted a visual survey program on native and landscape walnut and butternut throughout the state. To date, TCD has not been found in Michigan, but continued surveys will be necessary as more effective detection tools are developed.



### Blueberry Varietal Verification Survey

Blueberry varietal identification work done in collaboration with the University of Connecticut Department of Plant Sciences confirmed all 150 samples from propagator nurseries and 141 (88%) of the samples from retail outlets as “true-to-name” for their respective cultivars of *B. thunbergii*. Ten of the samples from retail outlets appeared to be either mixtures or were mislabeled, and PCR failed or standard DNA was not available for 10 others.

### Barberry and Black Stem Rust Survey

Field survey on black stem rust of wheat indicated that the dreaded pest is not present in Michigan, while assessment of the incidence of wild populations of common barberry showed that the rust-susceptible barberry has not re-established in the major wheat growing parts of the state.

## Section 2 – Plant Pest & Commodity Certification

PPPM’s Plant Pest and Commodity Certification programs facilitate interstate, intrastate, and foreign trade through inspection and certification of nurseries and plant material and provide an unbiased, third-party inspection service for the produce industry through the fruit and vegetable inspection program. The goals of these programs are to:

- ◆ Prevent the spread of harmful pests and diseases which could lead to serious ecological and economic losses.
- ◆ Facilitate the export of plant-based commodities (dry beans, grain, hay, nursery stock, logs, and lumber) to markets in more than 60 countries.
- ◆ Ensure plants purchased by consumers meet requirements for viability, trueness to varietal name, and quality standards.
- ◆ Assure Michigan fruit and vegetable producers meet the requirements necessary to access local and international markets.



## Nursery Program

Nursery inspections facilitate the sale of plant materials, such as hardy perennials, trees, shrubs, herbaceous perennials, small fruit plants, and hardy bulbs.

Nursery and perennial plant producers generate about \$291 million in annual sales. Sales of Christmas trees by Michigan producers generate another \$41.5 million, representing 2.87 million trees; while, sales of wreaths and boughs account for an additional \$1.3 million (source: 2004 rotational survey values). Michigan nursery growers produce stock for sale within the state and ship to 35 states and foreign markets. Through the inspection process, PPPM ensures plant materials entering market channels are free of pests and diseases. The primary reasons for inspection are twofold:



- Prevent the spread of harmful pests and diseases which could lead to serious ecological and economic losses.
- Assure plants purchased by consumers meet requirements for viability, trueness to varietal name, and quality standards, such as those prescribed by the American Nursery and Landscape Association.
- Besides inspecting for pests and diseases, PPPM field staff also makes sure that production areas are free from weeds. For those plants destined for out of state markets, the commodity must meet the phytosanitary requirements of the receiving state.
- Inspectors visit nursery stock dealers who receive stock from high-risk states to review shipping documents and confirm the stock is free of pests and diseases. Over a dozen pests are the main focus of these inspections. Import inspections are also performed at both the grower and dealer level when nursery stock arrives from foreign sources.

## Export – Interstate Certification

PPPM certifies nursery stock, Christmas trees, logs, hay, and bedding plants for interstate shipment. PPPM field staff ensures plant materials meet the quarantine requirements of the receiving states. Of primary importance are five major quarantine-significant pests: gypsy moth, pine shoot beetle, emerald ash borer, Japanese beetle, *Phytophthora ramorum* blight, and black stem rust. Japanese beetle is the focus of several external state quarantines as well as the National Japanese Beetle Harmonization Plan. To certify plant materials for shipment outside gypsy moth regulated areas, PPPM inspectors assure freedom from this pest through an egg mass survey plus the required annual inspection. In areas of high gypsy moth populations, PPPM also conducts additional checks in the spring for the presence of larvae that may be blown in from surrounding areas. The black stem rust quarantine applies to barberry and related species and only approved resistant varieties may be sold.

## Foreign Export

Under cooperative agreement with USDA, commissioned PPPM staff members receive training and authorization to issue federal phytosanitary certificates facilitating trade in foreign markets and the export of Michigan commodities shipped to nearly 60 countries worldwide. The vast majority of exports went to trading partners in Canada and Mexico, as well as to Europe and South America. The largest export categories by volume are propagative items (nursery stock and agricultural seed), grain for consumption, straw, logs, and lumber.



PPPM also monitors compliance with special export programs to assure producers meet the requirements of these new initiatives. The “Apples to Mexico” program is the most recent initiative facilitated by a partnership between MDARD-PPPM, USDA, Michigan Apple Committee, MSU, and Mexican officials. The US/Canada Greenhouse Certification Program is another successful export program facilitated in Michigan by PPPM staff.

### **PPPM Plant Pathology Laboratory Activities in Support of Export and Plant Disease Prevention**

PPPM Plant Pathology Laboratory, located within MDARD's Geagley Laboratory, performs many activities in support of certification and export. PPPM Plant Pathology is actively involved in improving the quality of pome and stone fruit trees in Michigan. This virus-free indexing program is established at a large commercial fruit tree firm in southwest Michigan. PPPM Plant Pathology also conducts virus-free certification of blueberry plants to help growers obtain disease-free vigorous plants for export and domestic markets. Other activities include dry bean testing, seed corn certification, and support of CAPS surveys such as plum pox virus, sudden oak death, and viruses of imported perennial ornamentals such as hosta.

### **Biotechnology and Plant Post-Entry Quarantine Import Permits**

To facilitate safe introduction of foreign genetic material to improve the quality of fruit trees and other crops in Michigan, PPPM reviews applications and issues import permits in cooperation with USDA-APHIS-PPQ. In 2011, PPPM, in agreement with USDA, approved a total of 101 permits, including renewals, for commercial companies and research and teaching institutions in Michigan. Eighty-nine permits were issued for interstate movement and field trials of genetically modified organisms (GMO), seven for the importation and movement of plant pathogenic organisms, two for movement of federal noxious weed plants, and three for the importation of soil samples for laboratory research and analysis.

### **Fruit and Vegetable Inspection Program**

The Fruit & Vegetable (F&V) inspection program offers an unbiased, third-party inspection service for the produce industry in Michigan and throughout the United States. Inspections are based on USDA and Michigan standards, processor specifications, and/or industry requests. USDA standards are used nationwide as a basis for purchase and to resolve disputes. All F&V staff must be licensed by USDA on each commodity they inspect.

### **Shipping Point Inspections**

Shipping point inspections are used to assure the quality and condition of Michigan produce prior to shipment. This type of inspection verifies Michigan produce meets the grade marked on the containers and bags. Some shipping point inspections are mandatory such as exports, the school lunch program, and government purchase inspections. USDA grades are recognized throughout the world and are used as a basis to market produce.

### **Process Inspections**

Seasonal F&V inspectors perform inspections on raw produce received from farmers at process plants and receiving points. The inspections are based upon USDA standards and/or processor specification. Process inspections protect Michigan farmers by providing them with an unbiased, third-party inspection upon which they are paid for their produce. In addition, inspections protect processing plants from receiving poor-quality produce from Michigan farmers. They also protect Michigan consumers from receiving poor-quality produce in processed goods.

### **Market Inspections**

F&V inspection staff are licensed by USDA to conduct market inspections on produce entering the channels of trade from anywhere in the world. Market inspections protect the buyer, broker, and consumer from receiving poor-quality produce or produce which does not meet the promised grade or condition. Market inspections are used to resolve disputes which end up in court and are vital to the survival of the state's buyers, brokers, and receivers of Michigan produce worldwide. PPPM has three F&V staff fully licensed to inspect incoming market loads of produce.

### **Good Agricultural Practices, Good Handling Practices**

Good Agricultural Practices and Good Handling Practices (GAP/GHP) were developed by USDA as a result of requests from states, shippers, and growers; and provides set guidelines for the fresh produce industry verifying good agricultural and handling practices. This is an independent, third-party, audit-based service provided by trained and licensed fruit and vegetable inspectors and Plant Industry staff. These staff have successfully completed the GAP/GHP training class and have participated in a minimum of three audits, including two as the lead auditor.



Currently, there are 11 MDARD staff members fully trained and licensed to perform audits for USDA GAP/GHP in Michigan. This program is currently being used by Michigan's apple, asparagus, potato, peach, carrot, cherry, onion, blueberry, radish, green onion, beet, raspberry, apricot, pear, strawberry, watermelon, winter squash, summer squash, and cantaloupe industries. This type of audit is required by some purchasers of produce and is mandatory to participate in the school lunch program.



### Controlled Atmosphere Storage Licensing Program

Enjoying crisp, juicy, flavorful Michigan apples year-round is possible due to Controlled Atmosphere (CA) storage. CA involves careful monitoring and control of temperature, oxygen, carbon dioxide, and humidity. All CA rooms are inspected and sealed by F&V inspection staff annually. Controlled atmosphere is required by some foreign countries as a condition of sale or phytosanitary requirements.

### Seed Potato Inspection

F&V inspectors conduct mandatory inspections on all Michigan certified seed potatoes prior to shipment to various farms throughout the U.S. Michigan continues to be a national leader in production of potato seed, with the largest market here in Michigan. In the fall, F&V inspection staff conduct quality control inspections during harvest of Michigan certified seed potatoes prior to placement in storage bins for shipment in the spring. The final certification inspection occurs while seed potatoes are being loaded into trucks. During 2011, F&V inspectors conducted 90 shipping point inspections on approximately 4.5 million pounds of seed potatoes.

### Fruit & Vegetable Certificates Issued

Shipping Point Inspections.....	5,020
Process Inspections.....	269
Market Inspections.....	596
GHP/GAP Audit Inspections.....	281

### Licenses Issued

Controlled Atmosphere Licenses.....	72
Wholesale Potato Dealer Licenses.....	18

### Plant Pest & Commodity Certification Statistics

#### Nursery Licensing

Total Licenses.....	5,334
Total Growers Licensed.....	1,348
General Nursery Licenses.....	934
Plant Grower Licenses.....	99
Small Scale Grower Licenses.....	315
Total Dealers Licensed.....	3,986
Dealer in Nursery Stock Licenses.....	3,278
Plant Dealer Licenses.....	329
Small Scale Dealer Market License.....	149
Nursery Stock Dealers Market Licenses.....	175
Plant Dealers Market Licenses.....	55

#### Nursery Inspections

Growers: Total Acres Inspected.....	8,648
Dealers: Dealers Inspected.....	64





### Seed Corn Inspections

Total acres inspected.....30,000

### Christmas Tree Inspection – Federal Gypsy Moth & Pine Shoot Beetle Quarantines

Fields Inspected.....366

Percent of Fields in Compliance.....96.5

Acres Inspected.....4,938

### Pine Shoot Beetle Compliance Management Program

Firms Enrolled.....8

Fields Enrolled.....15

Acres Enrolled.....193

### Export Certification

#### Federal Phytosanitary Certificates Issued

All Commodities – Phytosanitary

Certificates Issued.....3,669

### US/Canada Greenhouse Certification Program

Firms Enrolled.....3

Shipments Certified.....414

### Nursery Firms Issued Compliance Agreements for Federal/State Quarantines

Black Stem Rust.....15

Gypsy Moth.....94

Japanese Beetle.....84

Pine Shoot Beetle.....38

Total Compliance Agreements Issued.....231

### Plant Pathology Laboratory

#### Virus-Free Indexing of Pome & Stone Fruit Trees

Stone and pome fruit trees maintained for  
certification of budwood for virus-free status.....4,299

#### Blueberry Virus-Free Certification

Samples tested representing 134 cultivars  
from five commercial growers.....335

#### Dry Bean Seed Testing

Samples tested for seed borne diseases.....89

#### Seed Corn Certification

Seed corn samples tested for seed.....664

#### Plum Pox Virus

Michigan samples collected – all negative.....6,554

New York samples collected – all negative.....5,220



## Section 3 – Food Safety & Consumer Protection

### Commercial Feed Program

The commercial feed program helps to assure the safety and wholesomeness of feed and food products in Michigan through its inspection and sampling program. Approximately 1,200 feed manufacturers and distributors of more than 2.5 million tons of commercial feed and feed ingredients are regulated under the program. Safe and nutritious feed, free of contaminants and harmful residues, is the over-arching goal of the program.

PPPM regularly inspects, samples, and analyzes commercial feed to ensure that feeds are in compliance with the Michigan Commercial Feed Law and the rules promulgated under the act. In 2011, PPPM sampled over 1,500 feed products. Inspections and sampling help to assure that feed products offered for sale are safe and that they provide the promised nutrition. Inspections involve not only feed products, but also make sure the processes used to create them are in compliance with current good manufacturing practices.

To ensure that companies comply with Michigan's licensing and labeling requirements, PPPM inspectors inspect any facility in which feeds are manufactured or distributed including feed mills, farm suppliers, grocery stores, pharmacies, gas stations, and wholesale distributors. In addition, PPPM staff review feed labels to prevent deceptive labeling and investigate reports of animal deaths or illnesses where feed may be implicated.

### Medicated Feed

Therapeutic and production drugs are commonly administered to livestock and poultry through their feeds. For this reason, PPPM monitors the manufacturers of medicated feeds and takes samples to ensure compliance with federal regulations. These regulations cover good manufacturing practices designed to prevent unsafe drug residues in human food.



In 2011, 196 medicated feed samples were collected and analyzed. Out of these samples, 32 were found to be violative and did not meet drug label guarantees. Violation notices were sent to these retailers and manufacturers. Trace-forward and trace-back inspections, audits, and additional enforcement were conducted at the retailer and in-state manufacturer locations.

### Bovine Spongiform Encephalopathy (BSE or “Mad Cow Disease”)

PPPM is an active participant in a national effort led by the U.S. Food and Drug Administration (FDA) to prevent the introduction and establishment of BSE in the United States. This is done by closely monitoring the use of certain animal-derived proteins in animal feed. PPPM inspectors have been inspecting feed manufacturing facilities throughout the state under this program since 1998. All firms handling restricted protein materials are inspected at least yearly to assure continued compliance. In 2011, 85 inspections helped to assure that Michigan livestock and consumers were protected from BSE. PPPM staff collected 100 samples to be analyzed for prohibited protein as part of the annual feed sampling program. No prohibited protein was found.

### **FDA BSE - Feed Safety Cooperative Grant**

In September 2010, Michigan was one of 12 states to be awarded with a FDA Feed Safety Cooperative Grant. The five-year, \$1.25 million grant will allow MDARD to enhance its feed surveillance capabilities in the areas of: early detection, rapid response, and effective recovery. The initiative focuses on improving the control of and response to BSE and feed safety risks associated with imports, manufacturing, transportation, and distribution of feed products.

Though this grant and the Rapid Response Team grant, PPPM's feed program continues to utilize and build on its multi-divisional partnerships and training. This multi-divisional collaboration has been especially significant pertaining to feed complaints and investigations. Here are some examples from 2011:

- FDA, MDARD's Food and Dairy Division (FDD) and PPPM worked jointly on a salmonella contamination issue at a soybean processing plant. The two agencies worked through the regulatory and contamination issues to assist the firm with processing soybean products safely for animal feed. The firm is now under a consent agreement with MDARD.
- PPPM joined FDA investigators on a joint feed investigation in response to a Reportable Food Registry (RFR) report where improper feed mixing caused sulfur toxicity in dairy cattle. PPPM helped follow up with the impacted farms, firms, and surrounding states to ensure the formulation was corrected.
- PPPM's feed program has also collaborated with the Animal Industry Division, FDA, and Michigan State University's, Diagnostic Center for Population and Animal Health (DCPAH) on multiple pet food issues involving animal deaths and illnesses. DCPAH was utilized also for diagnostic information and laboratory analysis of feed samples.
- PPPM conducted feed import training with FDA specialists at the Blue Water Bridge international border crossing to learn how to identify the location of imported feed that is destined for Michigan. This partnership will help MDARD ensure that feed products crossing into Michigan meets U.S. standards pertaining to approved ingredients, labeling, and proper use of these products.

### **Rapid Response Team Activities**

Over the past three years, MDARD's Rapid Response Team (RRT) has had an integrated role with PPPM's feed program. In 2011, Michigan was awarded a competitive grant to maintain the program for an additional two years. Throughout 2011, the RRT and PPPM worked with FDA on pet food and livestock feed recalls by conducting follow-up inspections and trace-forward/track-back inspections to ensure the effectiveness of the recalls.

During the summer of 2011, MDARD's Sampling Team was activated to collect food and feed samples that were tested for contamination. Several multi-divisional Incident Management Teams were used to plan and run seven regional exercises across the state that engaged staff from across the department, reinforcing sample collection procedures, chain of custody, safety, and emergency management principles.



### **Animal Remedies Program**

Modern animal husbandry practices often demand the use of drugs and vaccines to prevent or treat diseases which can harm herd health and cause decreases in production. Many drugs and vaccines are also used extensively by homeowners in the care of their pets. The PPPM AnimalRemedy Program helps assure drugs and vaccines are registered, safe, properly labeled, and effective for their intended uses.

### **Elevator and Feed Mill Sanitation Program**

Through this program, PPPM inspectors work to address and prevent insanitary grain storage conditions which could negatively impact the safety of Michigan's feed and food supply. The inspection program also helps prevent costly economic losses due to pests and other forms of environmental or chemical contamination. Through these inspections, PPPM helped to safeguard nearly 165 million bushels of grain and 361 million pounds of dry edible beans, processed and stored in Michigan's grain elevator system valued at nearly \$2.8 billion.



In 2011, PPPM's Animal Feed Program developed a risk-based animal feed sanitation inspection program. This program will allow inspectors to assess a facility's sanitation practices based on a weighted scoring system. Each sanitation violation found at a firm is given a score based on the criticality of the violation, where the violation occurred within the facility, and its overall severity. The development of this type of program helps to focus compliance efforts and additionally serves as a training aid for new inspectors and the industry.

### Seed Program

There are approximately 450 seed labelers and 140 dealers who process and distribute agricultural and non-agricultural seed in Michigan. Michigan farmers spend more than \$315 million annually on agricultural seed. The goal of the seed program is to ensure the seed purchased by Michigan growers and homeowners for planting purposes is of good quality and meets standards for germination, purity, and freedom from noxious weeds established in the Michigan Seed Law. Through its seed program, PPPM also provides oversight of seed certification activities ensuring the genetic purity of plant varieties and potato seed and other quality standards for crops.

Additionally, PPPM assists USDA in making sure seed companies comply with federal seed requirements and assist in the enforcement of the Federal Seed Act by providing samples and documentation for seed shipped in interstate commerce.

### Fertilizer and Liming Program

The Fertilizer and Liming Program regulates approximately 600 manufacturers and distributors of more than 1.4 million tons of fertilizers, soil conditioners, and liming materials for both farm and non-farm use. Fertilizer is the most widely used agrichemical and is agronomically applied on about 5.5 million acres of Michigan farmland. Michigan producers and industry rely on this program to maximize yields and maintain a profitable agricultural operation. In addition, millions of state residents depend on this program to protect them from fraud when purchasing fertilizer for home and garden use.



### New Statewide Phosphorus Fertilizer Restrictions on Turf

Beginning **January 1, 2012**, the Michigan Fertilizer Law restricts phosphorus fertilizer applications on residential and commercial lawns, including athletic fields and golf courses, statewide. The new legislation prevents unnecessary applications of phosphorus fertilizer to turf and will help maintain and protect Michigan's vast water resources. The legislation will also provide statewide uniformity and guidance for local government, homeowners, and industry.

MDARD's phosphorus outreach information is available at [www.michigan.gov/mda-fertilizer](http://www.michigan.gov/mda-fertilizer) and at [www.BePhosphorusSmart.msu.edu](http://www.BePhosphorusSmart.msu.edu)

## Producer Security Program

This program regulates the enforcement of the Grain Dealers Act (PA 141 of 1939, as amended) and provides producer security review services for the Whole Sale Potato Dealers Act (PA 158 of 1964), Manufacturing (PA 266 of 2001) and Fluid Milk (PA 267 of 2001) Acts, and the Licensing Livestock Dealers Act (PA 284 of 1937). This program also provides financial accounting and assessment review services for the Agricultural Commodities Marketing Act (PA 232 of 1965). In addition, this program administers the Farm Produce Insurance Act (PA 198 of 2003) and the Agricultural Marketing and Bargaining Act (PA 344 of 1972).

The Grain Dealers Act regulates the storage, warehousing, and sale of farm produce in Michigan by providing for the licensure and bonding of 228 grain dealers. In 2010, there was \$2.2 billion in corn, dry beans, oats, soybeans, and wheat field crops in Michigan. A 2010 amendment, PA 264 of 2010, provides a warehouse receipt bond exemption for grain dealers that submit an audited financial statement and that meet current and equity ratio requirements.



The Farm Produce Insurance Act (PA 198 of 2003) was enacted to protect farmers in the event of a farm produce dealer's financial failure. The \$6.1 million fund provides payments to those farmers that are economically damaged by the financial failure of a farm produce dealer. The insurance fund is voluntary and is governed by a nine-member board appointed by the Governor to represent farmers and banking interests.

Administrative and regulatory responsibilities are provided by the Producer Security Program through a memorandum of understanding. Prior to the enactment of the Farm Produce Insurance Act, producers had lost \$13 million through numerous insolvencies at grain dealers in Michigan. Since 2005, the Farm Produce Insurance Act has paid \$920,000 in claims to 92 producers and has recovered \$600,000 from bankruptcy and probate proceedings. Under the voluntary provision of the Farm Produce Insurance Act, 77 producers out of an estimated 15,000 have requested assessment refunds.

The Agricultural Marketing and Bargaining Act works with the industry to establish marketing and processing pricing for asparagus and apple crops grown in Michigan. The producer security program oversees the arbitration process if these negotiations are not successful, and investigates unfair practice complaints.



## Section 4 – Pesticides & Agrichemicals

### Inspections/Investigations

PPPM conducts a variety of inspections and investigations to assure pesticides are used in compliance with state laws and regulations and in a manner minimizing adverse effects on human health and the environment. Pesticide inspections monitor the compliance of an individual or firm through routine contacts either in the field or at business locations. Pesticide investigations are based on an alleged violation and are conducted to determine if the allegation is true as well as monitor compliance with all pesticide regulatory requirements. In either case, detection of violations results in appropriate enforcement action and compliance assurance.

Common pesticide inspection activities include a variety of compliance monitoring such as federal and state marketplace inspections at locations where pesticides are sold, federal inspections at pesticide manufacturing facilities, and bulk pesticide storage inspections. Planned use inspections are comprehensive inspections which may occur at a variety of operations, such as commercial businesses, schools, private farm operations, and other locations where pesticides are used and pesticide regulatory requirements apply. Pesticide investigations usually start with the receipt of a complaint alleging one or more potential violations of Michigan pesticide laws or regulations. Within 24 hours, PPPM field staff first contact the complainant and then the applicator, investigate allegations, and determine compliance with all regulatory requirements. Inspectors also collect physical, photographic, and documentary evidence to determine if violations occurred. Like an inspection, investigations also use an objective approach to determine compliance with all applicable regulatory requirements. PPPM conducted 130 investigations in 2011.

### **Certification**

In Michigan, applicators who apply restricted use pesticides (RUPs) must become certified to use or supervise the use of RUPs. This requirement applies to private applicators producing agricultural commodities or commercial applicators (applicators that are not private). In addition, any person applying a pesticide, other than a general use, ready-to-use pesticide (as defined), as part of their job duties must be a certified or registered applicator. Registration and certification of applicators ensures that persons applying pesticides achieve a level of comprehension appropriate to apply pesticides. There are 21,948 applicators “certified” and 312 applicators “registered” to apply pesticides in Michigan.

### **Agricultural Pesticide Dealer Licensing**

In February 2008, legislation was passed creating a new Agricultural Pesticide Dealer (APD) license program. The new license program regulates the sale of agricultural pesticides into Michigan, regardless of the point of origin. Any APD that is not licensed as a RUP dealer must obtain the new APD license. If the APD business is located outside Michigan, they must also retain a resident agent in the state. Out-of-state RUP or APD locations must now report the sale of all agricultural pesticides to the registrant/producer so that all applicable groundwater sales-based fees are paid. In 2011, PPPM issued 215 APD licenses.

### **Registration**

Pesticides sold, offered for sale, or used in Michigan must be registered with PPPM. This program gives PPPM the ability to regulate which products are permitted for use in Michigan and allows the division to place additional use restrictions on pesticides, when warranted, to protect human health or the environment. Generally speaking, pesticides registered in Michigan are first registered by the Environmental Protection Agency (EPA) where they undergo a number of environmental and toxicological assessments. Pesticides are registered for sale annually. In addition to registration fees, registrants also pay an annual groundwater fee supporting environmental stewardship projects. PPPM registered 15,989 pesticide products in 2011.

In 2011, PPPM again received funding from EPA to conduct internet marketplace inspections. These inspections focus on four factors associated with both federal and state priorities, including detection of unregistered/cancelled pesticide products, illegal restricted use pesticide sales, improper health and safety claims, and detecting pesticides not registered by PPPM. Thirty internet inspections were conducted, looking at over 945 pesticide products. As a result of the inspections, 11 referral letters were sent to EPA Region 5 for federal violations. The internet inspections also identified 64 pesticides not registered for sale in Michigan.

### **Pesticide Enforcement Activities**

When violations of Public Act 451, Part 83, Pesticide Control, or regulations thereunder, are detected, PPPM has a variety of enforcement activities that can be used to gain compliance and issue penalties. Options include: warning letters requiring a written response as to how an individual or firm will comply with requirements, or hearings where PPPM and the defendant review findings and develop a compliance agreement. PPPM can issue administrative penalties (fines) or work within the judicial system to seek warrants and prosecute violators as well as conduct formal hearings to revoke business licenses or certification/registration credentials.



***Pesticide Roadside Inspection***



## Unique Investigations

In 2011, several unique investigations dealt with consent, safety, or human health issues. The following are examples of those investigations:

### Repackaging Herbicides

In June 2011, PPPM investigated an allegation of repackaging a herbicide into plastic milk jugs for distribution to the public. The director of a local program designed to distribute herbicide, fertilizer, and seed to create deer feed plots decided that he could save money by purchasing glyphosate herbicide in 2.5 gallon containers rather than smaller quart, or gallon containers. The rate of application recommended was two quarts per acre. The problem arose when it came time to distribute the glyphosate to the landowners who signed up for the program. Most of the landowners signed up for one or two acres. The director decided to repackage the glyphosate into used one-gallon milk containers and distribute the used milk containers filled with two quarts or one gallon of glyphosate, without the manufacturers pesticide label, to the landowners.

PPPM immediately gave the director a verbal stop order after he admitted to the distribution, and later issued a written stop prohibited conduct order. PPPM also instructed the director to provide the glyphosate pesticide label to all of the participants who had not received one. PPPM conducted the investigation, collected evidence, and issued a Notice of Intent with an administrative fine.

### No Pest Present

PPPM investigated two complaints where a licensed commercial firm was called to different residences to treat for an unidentified pest. In both situations, the applicator was not able to find evidence of any pests. The complaint was that the pest control operators had taken advantage of the residents, and had applied pesticides when there was no pest present, or there was no likelihood that a pest infestation would occur, a violation of state law.

PPPM staff inspected the houses and found no evidence of pests. PPPM staff contacted both firms involved and, in each case, the applicator said they had not found any pests, but had made the pesticide application anyway.

### No Consent for Services

PPPM investigated three unusual incidents in 2011 where applicators either treated the wrong location or treated a location where all residents/owners had not given consent for services, in violation of Regulation 637, Rule 12. In two instances, applicators performed pesticide applications (by air) to locations identified on work orders and later found, in one instance, a farm field was improperly identified and in the other a forest pest treatment occurred over the homes of objectors. Unfortunately, the farm field treated was in the process of becoming a certified organic farm, further compounding the mistake. These two applications have caused PPPM to consider alternative enforcement actions to reflect the misinformation provided to the applicator. The third incident involved terrestrial application to an agricultural field without the applicator confirming the correct location for treatment. This third incident was clearly the responsibility of the applicator and warranted a standard enforcement response.

### Drift on a State Vehicle

While observing aerial application activities from a road right-of-way, a PPPM inspector's state vehicle was inundated with spray material from the aerial application conducted by an Indiana-based applicator. Laboratory analysis of the spray residue taken from the state vehicle was positive for the pesticide applied by the applicator.



***Pesticide on state vehicle***

### Bed Bugs

In recent years, bed bug infestations are increasing and issues related to bed bug control are increasing as well. Complaints alleging pesticide misuse for bed bug control are on the rise, and PPPM suspects Michigan, like other states, will continue to receive more bed bug complaints. While PPPM can't help residents or tenants with pest control costs or landlord/tenant relations, it can help by investigating allegations of pesticide misuse or work performed by unlicensed businesses or uncertified applicators. Conventional pesticide applications to control bed bugs require an

intensive preparation by residents, landlords, and commercial businesses (hotels, movie theatres, restaurants, etc.) for an applicator to be successful in controlling an infestation. Most agree a non-pesticide treatment using heat is the most successful, but is also the most expensive option available. Several Michigan businesses have purchased specially trained canine units for bed bug detection, since the pest is very small and light infestations are hard to detect by visual inspection. PPPMD investigated a variety of complaints related to bedbugs, including alleged misapplication, unlicensed businesses, uncertified applicators, and repackaging pesticides for distribution to tenants.

There have been many educational materials produced to educate the public on this hitchhiker pest. Some simple practices can go a long way to reducing the chance of bringing the pest home. To learn more about these practices go to [http://www.michigan.gov/emergingdiseases/0,1607,7-186-26346\\_25949\\_55522---,00.html](http://www.michigan.gov/emergingdiseases/0,1607,7-186-26346_25949_55522---,00.html).

## Agrichemical Safety and Security

In response to recent world events, PPPM strives to ensure fertilizers and pesticides are stored properly and securely to prevent bioterrorism and other misuse. Each year, PPPM staff inspects agrichemical containers to ensure they were properly identified, locked, and secure. PPPM also continued its outreach efforts to advise agricultural dealers and farmers on how they can help deter illicit use of agrichemicals while protecting their safe, intended use.



## Bulk Agrichemical Storage Program

The program ensures bulk storage facilities are constructed, installed, and maintained in a safe manner with the least possible impact on people, property, and the environment.

More than 55 million gallons of Michigan agrichemicals are safeguarded through the bulk storage program. This amount is expected to increase by 30 percent by the end of 2012. In 2011, PPPM registered 222 fertilizer and pesticide bulk storage facilities and performed numerous consultations with firms building new bulk storage containment facilities and renovating existing containment to ensure compliance with storage regulations. PPPM also continues to conduct on-farm consultations and outreach activities to inform staff, industry, and producers about on-farm fertilizer storage and poly tank integrity.

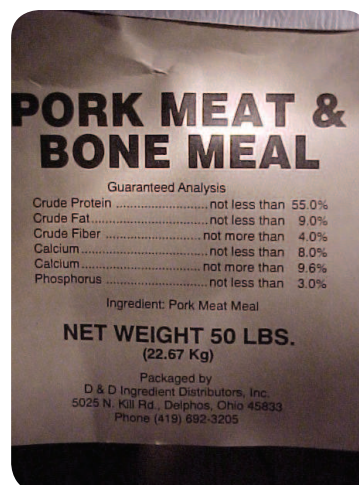


The phase-in period for the new federal pesticide containment regulations ended in 2010. Michigan storage facilities were not affected because in 2009, EPA approved MDARD's request to continue implementing Michigan's regulations in lieu of the federal containment regulations. EPA found Michigan's pesticide bulk storage regulations to be equal and some areas, even more protective than the federal regulations.

## Section 5 – Food Safety, Consumer Protection & Environmental Protection Statistics

### Food Safety & Consumer Protection Inspections

Total No. of Inspections.....	1,624
Agricultural Products.....	1,111
BSE Rule Compliance.....	85
Bulk Storage.....	8
Grain Elevator Sanitation.....	353
Federal Contract Medicated Feed.....	5
State Medicated Feed.....	62
Complaint Investigations.....	12



Products Sampled.....	1,542
Feed – Nutrient.....	1,246
Feed – Medicated.....	196
Feed - BSE.....	100

### Licenses/Registrations

Animal Remedies	
Product Registrations.....	1,704
No. of Registrants.....	124
Commercial Feed Manufacturer/Distributor.....	1,213
Michigan Firms.....	335
Out-of-State Firms.....	878
Fertilizer Manufacturer/Distributor.....	602
Michigan Firms.....	210
Out-of-State Firms.....	392
Specialty Fertilizer & Soil Conditioner	
Product Registrations.....	4,609
Liming Materials	
Product Registrations.....	98
Agrichemical Bulk Storage Facilities.....	222
Fertilizer Product Distribution.....	1.4
(July 09-June 10) Tonnage	million tons
Commercial Feed Product Distribution.....	2.8
(July 09-June 10) Tonnage	million tons

### Agricultural Products Enforcement

(Feed, Seed, Fertilizer, Remedies, Lime, Bulk Storage, Elevator Sanitation)	
Violation Notices.....	450
Failure to License/Register.....	49
Stop Sale.....	401
Value of Violative Products Seized.....	\$401,518
Warning Letters.....	38
Compliance Conferences.....	5

### Environmental Protection Statistics

#### Licenses/Certifications/Registrations

Commercial Pesticide Applicator	
Business Licenses.....	2,212
Restricted Use Pesticide Dealer Licenses.....	274
Agricultural Pesticide Dealer Licenses.....	215
Total Certified/Registered Applicators.....22,260	
Commercial Pesticide Applicator	
Certifications.....	14,458
Private Pesticide Applicator	
Certifications.....	7,490
Commercial Registered Applicators.....312	
Total Certification/Registration Exams	
Administered.....	14,289
Pesticides Registered in Michigan.....	15,471





**Pesticide Inspections/Investigations**

Pesticide Misuse Investigations (agriculture).....	27
Pesticide Misuse Investigations (non-agriculture).....	103
Planned Use Investigations (agriculture).....	16
Planned Use Investigations (non-agriculture).....	29
Other Inspections.....	427
Restricted Use Pesticide Sales Audits.....	30
Federal Marketplace Inspections.....	12
Federal Pesticide Producer Inspections.....	23

**Pesticide Enforcement**

Advisory Letters.....	7
Warning Letters.....	133
Hearings.....	0
Administrative Penalties.....	34
Prosecutions.....	0

**Freedom of Information Act (FOIA) Requests**

Pesticide Program Requests.....	72
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*Aseptic Sampling*



*Incorrect Lawn Product*



*Operation Safe Testing*



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